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ABSTRACT

The mini reviews in this collection synthesize current information regarding three timely topics in outdoor education: utilizing adventure education as a treatment mode for juvenile delinquency: providing outdoor education for the handicapped: and developing outdoor education nature centers. In "Outdoor Adventure Education and Juvenile Delinquents", adventure education is fully described, including its origin in the Outward Bound movement, its application in rehabilitation, and its structural components. The multiple values and benfits of adventure education to the juvenile delinquent are noted along with its effectiveness in rehabilitation. Several information sources are indicated. "ERIC Information Resources on Outdoor Education and the Handicapped" includes a listing of ERIC documents, bibliographies, and directories pertaining to outdoor education and to the handicapped. Four sample outdoor education programs designed for the handicapped and included in the ERIC data base are summarized and guides for program development are listed. Two packages of learning activities and teaching materials are also described. Nature centers are defined in terms of site selection, facilities, and services in "Outdoor Education Nature Centers". The centers' benefits and values are noted. The establishment of a center (planning, construction, organization of space, publicizing) is explained. Some features of existing centers are highlighted. (SB)

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IMPORTANT ISSUES IN OUTDOOR EDUCATION: ERIC/CRESS MINI REVIEWS

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PREFACE

In an effort to more readily meet the needs of its users, ERIC/CRESS (Educational Resources Information Center/Clearinghouse on Rural Education and Small Schools) contracted authors this year to produce the "mini reviews" included in this collection. Since ERIC/CRESS receives repeated requests for information on certain timely topics, it was determined that we might most efficiently answer such requests with pre-printed fact sheets and/or mini reviews. Accordingly, we prioritized our user requests and contracted authors to produce brief synthesis pieces dealing with juvenile delinquents and adventure education, handicapped education, and nature centers as pertaining to outdoor education. These topics, then, are indicative of major concerns of the outdoor educators and others requesting information on outdoor education from ERIC/CRESS. Designed to aid the busy practitioner in accessing important information, these publications have now been collected in a single document for purposes of providing microfiche availability and announcement in Resources in Education, the ERIC monthly index to documents in the ERIC data base.

Since we are mandated both to retrieve and disseminate information pertinent to outdoor education, we solicit more detailed papers dealing with these and other outdoor education topics as well as topic suggestions for comparable fact sheets and mini reviews.

Judi Conrad
Information Specialist for
Rural, Small School and Outdoor Education
Las Cruces, New Mexico 1980

OUTDOOR ADVENTURE EDUCATION AND JUVENILE DELINQUENTS

The juvenile delinquent typically displays a complex and negative set of personality characteristics. His self-perceptions are confused and he has a negative self-image. He lacks self-reliance and refuses to take responsibility for himself, yet neither trusts nor gets along well with others. The juvenile delinquent rarely applies forethought to his actions; his life is usually a series of failures. Having little personality strength for coping with frustration, he is impulsive in his response to it. Because the juvenile delinquent is very physical, action is his usual mode of self-expression. Cognitively, he deals poorly with abstraction and is a limited learner.

Following the model of adult correctional institutions, rehabilitation of juvenile delinquents removed from the community has traditionally consisted of incarceration in large, impersonal facilities with a strong emphasis on regimentation and strict adherence to the rules. Yet it was known as early as the 1960's that such treatment was not only dehumanizing and costly but ineffective as well; recidivism rates were running 50% to 60% nationally. Incarceration became both increasingly difficult and socially undesirable as rising delinquency began to involve all socio-economic groups and was no longer largely confined to males. In the mid-1960's, concern for alternative approaches led to the exploration of adventure education in the treatment of juvenile delinquency (Kelly and Baer, 1968).

Adventure Education Defined

Adventure education refers to learning programs in which outdoor pursuits that are perceived as either physically or psychologically dangerous are used within a framework of safety and skills development to present meaningful challenges leading to increased satisfaction and personal, social, and environmental awareness. The concept — variously referred to as adventure-based education, wilderness adventure programs, and environmental stress-challenge programs — is an outgrowth of the Outward Bound Schools begun by German educator Kurt Hahn in Wales in 1945. Hahn's goal was to build the character and judgment of young men by using challenge as an educational tool to impel them to perform beyond their preconceived physical and psychological limits. As the public began to recognize the value of controlled challenge in personal development, the schools flourished and in 1962 the first of six American Outward Bound Schools was founded in Colorado.

By the mid-1960's the concept of adventure education was firmly established. The movement grew and today there are more than 250 adventure education programs in the United States alone, notable among them the National Outdoor Leadership School. Although there is no formal controlling body for adventure education, the Outward Bound organization serves as a focus for the movement by providing instructor training and consulting on program development. Similarly, the rigorous basic Outward Bound course serves as a model for most of the programs, although some do not stress challenging outdoor situations as much as recreation and fun.

Adventure Education Program Characteristics

While it must be stressed that each program is different, they do share some common goals, objectives, activities, structures, and methods. Thus it is possible to generalize to some degree about the nature of adventure education programs.

The objectives of adventure education programs fall into three categories: affective, cognitive, and psychomotor skills. In affective terms, the programs attempt to improve the student's self-esteem, self-reliance, self-assertiveness, and self-awareness; to better his social attitudes, interpersonal communications, and trust and love of others; and to increase his awareness of, appreciation for, and identification with the environment. In terms of cognitive skills, adventure education programs attempt to impart specific knowledge and skills required for wilderness situations and also to improve the student's knowledge of group dynamics and his group interaction skills. Finally, the programs attempt to develop an increased level of physical conditioning, coordination, and agility. The entire adventure education process is one of balanced self-development.

Most Outward Bound adaptive programs are about a month long, although some schools sponsor specialized seminars lasting a week or less. Virtually

all programs have a three-phase structure (Lowenstein, 1975). In the introductory phase, students report to a base camp where they receive a general orientation to the facilities, quarters, and equipment. They begin general physical conditioning and intensive training in basic skills necessary to complete the course. Such skills might include first aid, safety, search and rescue techniques, map and compass skills, fire building, outdoor shelters, backpacking, survival strategies, and equipment use.

In the second phase, students apply their new skills in an instructor-supervised group expedition for five to fifteen students. The nature of the expedition will vary with the environment, but could include such activities as canoeing, river rafting, swimming, rock and ice climbing, mountaineering, gorge exploration, camping, backpacking, and night journeys. The expedition is given a specific goal, such as arriving at a certain point by a certain time, and the activities leading to the goal are generally organized so as to present increasingly difficult physical challenges in circumstances perceived as dangerous by the students. (It should be noted that the instructor has control over the danger because he takes all necessary precautions, is himself an expert in the skills required, has trained his students to the point of efficiency, and is aware of their abilities both individually and as a group.)

It is in phase two that teamwork, cooperation, and communication are emphasized. As the instructor retires from an active leadership role and serves more as a resource person, responsibility for accomplishing the expedition goal falls on the group as a whole. Only by working together to meet both individual and group challenges along the way can they succeed. For example, the course may include a steep climb to arrive at a camp site. Each student must negotiate the climb individually if the group is to meet the challenge of making camp at the appointed spot. The exercise of such traits as self-discipline, determination, leadership, unselfishness, humility, and foresight is essential and is reinforced constantly by the satisfaction and even the elation that comes as each challenge is successfully met.

Phase three consists of either an unsupervised small group expedition or a "solo" (a period of contemplation, isolation, and self-sufficiency in the wilderness), or both. Participants may be left in a predetermined spot for the duration (usually one to three days), or may leave the base camp for the wilderness and return at a prearranged time. They are given only minimal equipment and expected to use their new skills to provide food and shelter. Phase three is, in effect, a final examination. The examination demands not so much a mastery of skills, though that is of course essential, as a mastery of self. In the privacy of total solitude and face to face with an unyielding nature, few students can avoid an evaluation of themselves and of their abilities in relation to the adventure education experience. This is the focal point of many programs.

The Value of Adventure Education for Juvenile Delinquents

Adventure education is education in a microcosm. Therein lies much of its value for the juvenile delinquent. The limited world of the adventure education program is a society unto itself, with established rules, clearly defined jobs, and a small group of people who must interact for the good of the whole. Success in the microcosm is immediately applicable and transferable to the society at large. In the course of his few weeks in the program, the juvenile delinquent can experiment with new behavior for a limited period of time without making a rather overwhelming commitment to it. He can learn its value and begin to internalize it, aided by the constant reinforcement of meeting challenges successfully and growing group support.

The microcosmic society of a small group of peers works in the juvenile delinquent's favor to provide a framework of support for the sometimes agonizing development of individual strengths. Furthermore, small group living is a simple and direct social situation which provides the opportunity for the development of vital techniques of group interaction, invaluable for those who have difficulty coping with complex social interaction. Unable to remain isolated, the delinquent must learn to rely on others and, in turn, have them rely on him, sometimes in life-and-limb-threatening circumstances (Golins, 1978; Lowenstein, 1975).

The value of adventure education for the juvenile delinquent also lies in its appeal to his mode of learning. The concrete cognitive development so necessary for the delinquent is facilitated by the incremental presentation of specific outdoor skills. Skills instruction begins at the novice level and builds step by step to higher levels of mastery. Practice in applying the skills comes with the introduction of increasingly difficult problems and challenges throughout the course. The problems themselves — designed to arouse curiosity, strengthen competence, and promote cooperative solutions — are difficult, but also straightforward, structured, and not at all abstract. In fact, they are often so concrete that their solution is imminently desirable. (It is raining. How best to stay dry? It is cold and windy. How best to stay warm?)

Problem solution has a behavioral impact as well, since adventure education operates in a consequential setting. That is, the consequences of finding or not finding a problem solution become apparent immediately. If an individual doesn't figure out how to pitch a shelter in the rain, or if he is too lazy to do so, he will get wet quite soon. If he doesn't start a fire, both he and his food will be cold. Exercising the determination, judgment, and skills necessary to solve these problems results in immediate positive reinforcement. Success in solving problems during the course makes the juvenile delinquent more willing to attack his problems at home

and take responsibility for solving them.

A further value of adventure education for the delinquent is its remote setting. The wilderness is a strange and evocative environment for most delinquents. They are at once more alert and receptive. Yet despite its unfamiliarity, the vast, concrete, physical reality of the wilderness is something the juvenile delinquent can comprehend and respect. It complements his physical nature and is a perfect setting for its expression. Confrontation with the wilderness, when it occurs, is direct, usually physical, and often painful, but the environment is uncompromising and unyielding. It is the individual who must modify his behavior to survive (Golins, 1978; Lowenstein, 1975).

The style of instruction in adventure education programs is particularly valuable to the juvenile delinquent. The instructor provides information and assistance in an atmosphere of mutual respect and understanding. He is perceived as a competent and caring adult authority figure, a terribly important resource for the alienated juvenile delinquent wary of authority in its more standard and menacing forms (Golins, 1978).

Adventure education programs present a unique set of difficulties and challenges to juvenile delinquents, above and beyond the standard emotional and physical challenges of such programs. Because they arrive more physically unprepared than most participants, they find the courses more demanding. The standard pledge not to smoke during the course causes juvenile delinquents particular trouble. Sometimes there is not enough individual attention. Once the program is over, delinquents often return to environments ignorant and unsupportive of the values and lessons of an adventure education course. But on the positive side the programs' need for persistence challenges the delinquent's lack of endurance and determination. The need for pacing and forethought challenges his impulsivity. The need for adherence to safety rules challenges his concept of the worthlessness of rules and laws. The need for collaboration challenges his lack of faith in others; and the solo, his need for companionship (Kelly and Baer, 1968). At least in these regards, adventure education appears to be ideally suited to offsetting or exploiting many of the juvenile delinquent's negative personality characteristics.

In what may be his first associations with mastery, the challenges of the course repeatedly expose him to success and its satisfactions, and help break his longstanding pattern of failure. He learns to deal with frustration and stress using determination and self-discipline. The delinquent sees the value of forethought and planned action over impulsivity. He must achieve beyond his preconceived limits, demonstrating his competence by action, in terms he can comprehend. He takes satisfaction from his improved physical condition. More self-confident, he is better able to interact with and depend on others. The constant self-examination results in greater self-awareness, more accurate self-perceptions, and an improved self-concept.

The Effect of Adventure Education in the Treatment of Juvenile Delinquents

The effect of adventure education on juvenile delinquents has been documented in several studies, originating with the landmark work of Francis Kelly and Daniel Baer in 1968. It was Kelly, a psychologist, who first suggested treating delinquents with adventure education and who in 1964, through the Massachusetts Department of Corrections, set up an experimental program for sixty adolescent delinquent boys, using the facilities of three U.S. Outward Bound Schools. Based on scores of the Jesness Inventory Scale administered before and after the Outward Bound course, the experimental group significantly improved their social attitudes related to value orientation, alienation, manifest aggression, asocialization, and social maladjustment. Pre- and post-program scores on the Semantic Differential Test were also significantly improved in the area of self-concept.

Improved self-concept also resulted from Homeward Bound, a Massachusetts correctional program patterned after Outward Bound. As reported in 1979, experimental subjects showed a significant increase in self-concept in the course of the program, based on pre- and post-program scores on the Piers-Harris Self Concept Test. Furthermore, the experimental group had higher post-test self-concept scores than did a control group following standard institutional treatment.

In 1973, a report of Higher Horizons, a coeducational Outward Bound adaptive program for delinquent youth, sponsored by the New York State Division for Youth, indicated that participants evidenced greater harmony in group living and working, and greater sensitivity to the feelings of others. And a 1974 study regarding the social functioning of juvenile delinquents who had participated in the Wilderness School (Connecticut) indicated that after the program, the delinquents were less involved with drug and alcohol abuse than a sample of non-program delinquent youth. Also, program participants depended on welfare and other social services to a lesser degree than before the program, and to a lesser degree than the control group.

In short, results of these and other programs have been extremely favorable based on attitudinal testing, observation, and follow-up monitoring. The indications are that in addition to an improved self-concept, juvenile delinquents in adventure education programs demonstrate more positive attitudes towards their peers and authority; a reduced school drop-out rate; very successful post-treatment adjustment with respect to academic achievement and employability; and most importantly, a drastically reduced rate of recidivism (Wichmann, 1976).

The greatest amount of data available regarding adventure education programs for juvenile delinquents concerns recidivism. While it must be stressed that not all studies similarly define "recidivism," results are nonetheless very positive (Caldwell, 1978). The usual recidivism rate reported for delinquents who have experienced adventure education programs is approximately 20%, which compares very favorably with the 50% to 60% rate common for traditional treatment programs in the 1960's. In the original Kelly and Baer study, the recidivism rate nine months after the program was expected to be 40% for the experimental group of delinquents. In fact, the rate was just 20%. A control group routinely treated in public institutions recidivated at a rate of 34% in the same time period. "Reactive" juvenile delinquents (those committing what would be considered adult misdemeanors) in the experimental group demonstrated the lowest rate of recidivism, only 10%. Overall, juvenile delinquents in the experimental group who were committed to treatment for the first time recidivated at a rate of 33% versus 47% for first time commitments in the control group.

The discharges from Florida's Short Term Elective Program, S.T.E.P., for juvenile offenders, which combines wilderness survival training with group therapy, evidence a 28% recidivism rate. A study of program participants indicated that subsequent violations were most likely to occur seven to nine months and more than nineteen months after release from the program.

Recidivism studies have provided much information regarding the effectiveness of adventure education programs for specific populations of juvenile delinquents. Virtually all the studies agree that the older the child when he enters an adventure education program, the better his chances for success. Kelly and Baer note the importance of the age at which the delinquent's first court appearance occurs. They indicate that Outward Bound programs may have a greater impact on delinquents whose first appearance occurs after puberty, perhaps as a reaction to adolescent crisis. That study also indicates greater adventure education success with first time offenders than with habitual delinquents. The type of offense may also be significant in terms of program effectiveness. Several studies indicate that adventure education benefits delinquents who have committed misdemeanors or felony offenses but does not help those classified as "stubborn."

The design and structure of a program may be a significant determinant of its effectiveness. Some programs are organized for groups composed totally of delinquents. Such groups apparently do not function so well as heterogeneous groups because delinquents find it harder to organize themselves, to encourage each other, and to demonstrate persistence in overcoming challenges. Longer programs, especially those with follow-up provisions, provide more opportunities for self-examination, behavior change, and rapport between the staff and their changes. Finally, those adventure education programs with a higher level of excitement and greater challenges produce more feelings of accomplishment and competence for the delinquent than the more contemplative and intellectual programs.

Despite the many indications of its success, adventure education is not a panacea for the treatment of juvenile delinquents. In the first place, because so many programs are in the formative stages, there is no standardization of programs. In the second place, only a small percentage of delinquents are served by existing adventure education programs. Of over 250 U.S. programs in 1976, only 58 programs in 27 states accepted delinquents. Most of those programs accepted only limited numbers of delinquents into the regular courses. Participants were usually males between the ages of 13 and 19. Only 20% of the programs accepted anyone younger than age 12. However, it is certainly clear that a well-designed program of adventure education can be a very useful alternative in the treatment of certain juvenile delinquents. Adventure education should be viewed as a possible resource for early intervention into delinquency patterns.

More Information

A list of adventure education programs available as of November, 1979, entitled "A Directory of Adventure Alternatives in Corrections, Mental Health, Special Education, and Physical Rehabilitation," *Journal of Experiential Education*, V2 N2, p19-26, Fall 1979, may be ordered from:

Association for Experiential Education
P. O. Box 4625
Denver, Colorado 80204

A forthcoming paper by Gerald Golins discusses the background of adventure education as a therapeutic tool, and its uses both as a cost-effective alternative to long-term institutionalization and as a supplement to existing programs of youth serving agencies. The paper, entitled "Utilizing Adventure Education to Rehabilitate Juvenile Delinquents", will be available from National Educational Laboratory Publishers, Inc., in the late spring of 1980. The following abstract of the Golins paper is indicative of the document's substance.

ABSTRACT

Adventure based education is a process in which a willing learner is impelled at a calculated risk to himself and others within a primary peer group most often in a wilderness setting to master a conditional series of problems which enable the learner to lead a more autonomous life.

Courses are patterned after the standard course pioneered by the national network of Outward Bound Schools, and feature the mastery of an outdoor pur-

suit, such as mountaineering, river rafting, sailing, etc., as a mechanism for personal development. The courses are tailored to the needs and capabilities of the delinquents. Much emphasis is placed on thorough referral and follow through.

For delinquents, criminal or non-criminal, adventure education is used to either divert them from costly incarceration, or to supplement traditional treatment approaches.

As a diversionary mechanism, adventure based education represents a cost effective alternative to incarceration. As a supplementary program, adventure education enhances treatment goals. There is an ample number of exemplary programs throughout the country.

ERIC invites authors of pertinent program reports, theses, speeches, conference papers, and other materials to submit them for input into the ERIC data base. Such materials may be sent to the attention of Ms. Judi Conrad at:

ERIC/CRESS
New Mexico State University
P. O. Box 3AP
Las Cruces, New Mexico 88003

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(All materials are available from ERIC; appropriate numbers are given with each listing. Other availability is noted.)

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Caldwell, G.R. *Research and the Fullacy of Recidivism — Studies on Wilderness Programs for Troubled Youth.* 1978. (ED 165 927)

Cousineau, Claude. *The Nature of Adventure Education.* 1978. (ED 171 474)

Flood, John and McCabe, Beth. *Wilderness School Staff Report, 1978-1979.* 1979. (ED 175 582)

Golins, Gerald L. "How Delinquents Succeed through Adventure Based Education". *Journal of Experiential Education.* 1:2; Fall, 1978; pp. 26-29. (EJ 191 099)

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Kelly, Francis J. and Baer, Daniel J. *Outward Bound Schools as an Alternative to Institutionalization for Adolescent Delinquent Boys.* 1968. (ED 032 152)

Lowenstein, Daniel H. *Wilderness Activity Programs: An Activity Profile.* 1975. (ED 127 102)

Mortlock, Colin. *Adventure Education.* 1978. Available from Old Fisherbeck, Ambleside, Cumbria, UK LA22 *ODH (ED 172 994)*

Pollak, R. Timothy. *An Annotated Bibliography of the Literature and Research on Outward Bound and Related Programs.* 1976. (ED 171 476)

Svobodny, Linda A. *Increasing Self-Concept through Outward Bound.* 1979. (ED 171 009)

Wichmann, Theodore F. *Affective Role Expectations for Delinquent Youth in Environmental Stress-Challenge Programs.* 1976. (ED 156 394)

Wichmann, Theodore F. *Evaluation of Florida s STEP Program.* 1978. (ED 172 067)

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OUTDOOR EDUCATION

Mini Review

ERIC INFORMATION RESOURCES ON OUTDOOR EDUCATION AND THE HANDICAPPED

GENERAL RESOURCES

ERIC Bibliographies

Outdoor Education

ED 034 631 *Outdoor Education, An Overview* by Julian W. Smith (1969).

ED 058 986 *Sources of Funding for Outdoor Education* by Irwin Rosenstein (1970).

ED 091 095 *Outdoor Education and Its Contributions to Environmental Quality, A Research Analysis* by Robert L. Vogl and Sonia Vogl (1974) NELP—$2..25, Stock No. EC-012.

ED 118 336 *Adventure Programming* by John A. Metcalfe (1976) NELP—$3.00, Stock No. EC-036.

ED 134 384 *Incorporating Orienteering in School Programs* by Douglas Bradford (1977) NELP--$3.00, Stock No. EC-046.

ED 140 994 *Directory of Outdoor Education Degree Programs in Higher Education* by Russel E. Bachert, Jr. (1977) NELP—$12.00, Stock No. EC-053.

ED 149 884 *Outdoor Education: A Bibliography of ERIC Abstracts Supplement No. 7* by ERIC/CRESS (1978) NELP—$6.00, Stock No. EC-060.

ED 164 168 *Outdoor Education: A Bibliography of ERIC Documents Supplement No. 8 (1978)* NELP—$3.75, Stock No. EC-069.

ED 167 317 *Outdoor Education: Community Studies Through Field Experiences* by Malcolm D. Swan (1979) NELP—$6.50, Stock No. EC-074.

ED 136 971 *Outdoor Education: A Selected Bibliograghy (with ERIC Abstracts) ERIC/CRESS Supplement No. 6* by ERIC/CRESS (1977) NELP—$5.50, Stock No. EC-052.

Forthcoming ERIC/CRESS Publications: Available from NELP, Spring 1980.

Utilizing Adventure Education to Rehabilitate Juvenile Deliquents by Gerald Golins

Establishing an Outdoor Education Association: The New York Model by Tom Benjamin.

Legal Liability—Adventure Activities by Betty van der Smissen

Directory of Selected State Outdoor Education Programs: State Responses to a 1979 Query Conducted by the Council on Outdoor Education/AAHPERD.

Handicapped:

To save you money, ERIC/CEC has published searches on 17 popular topics as topical bibliographies, available for $4.50 each. Topical bibliographies, average 50-100 citations with publication date, author,title, source, and 200-word summary. Topical bibliographies may be ordered from:

The Council for Exceptional Children/ERIC Clearing house on Handicapped and Gifted Children
1920 Association Drive
Reston, Virginia 22091

801 Attitudes Toward the Handicapped—1978

802 Early Childhood—Identification and Assessment—1978

803 Early Childhood—Programs—1978

804 Emotionally Disturbed—Teaching Methods and Programs—1978

805 Gifted—Identification and Assessment—1978

806 Gifted—Programs, Teaching Methods, and Curriculum—1978

807 Learning Disabilities—Identification and

Assessment—1978

808 Learning Disabilities—Programs—1978

809 Learning Disabilities—Teaching Methods and Curriculum—1978

810 Mainstreaming—1978

811 Mentally Retarded—Programs—1978

812 Mentally Retarded—Teaching Methods and Curriculum—1978

813 Nondiscriminatory Testing—1978

814 Normalization—1978

815 Parents/Attitudes, Counseling and Education—1978

816 Severely and Multiply Handicapped—Programs, Teaching Methods, and Curriculum—1978

817 Teacher Education—1978

Other Bibliographic Resources

ED 113 896 *The Natural Environment and Human Development: Implications for Handicapped Children In Urban Settings* by Donald E. Hawkins and others (1975)

Directories

Outdoor Education Programs:

ED 020 916 *Science Education Information Analyis Analysis Center Newsletter* (1968)

ED 079 898 *The Easter Seal Directory of Resident Camps for Persons with Special Health Needs* (1973) National Easter Seal Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago, Illinois 60612. Price—$1.00, Stock No. E-41.

Financial Assistance:

ED 092 487 *Guide for Financial Assistance and Program Support for Activities in Physical Education and Recreation for Impaired, Disabled and Handicapped Participants: Foundation Programs. August 1973* by Paul Harrington (1973)

ERIC DATA BASE

A listing of all the documents in the ERIC data base pertaining both to outdoor education and to the handicapped, and dating from April, 1968, to November, 1979, is available at a cost of $2.50 from: ERIC/CRESS, P.O. Box 3AP, New Mexico State University, Las Cruces, New Mexico 88003

The listing provides publication information, availability data, and abstracts for forty-three pertinent documents, including program descriptions and evaluations, teaching guides, recreational and learning activities, position papers, and resource guides. Sponsored by both public and private institutions, these documents address problems related to virtually every type and degree of physical, mental, and emotional handicap. As a result there is a vast difference in the objectives, scope, activities, methods, and success of the various programs and materials. Because generalization is impossible, the items specifically discussed below have been selected to illustrate the variety represented in the ERIC data base listing.

Progran Descriptions and Evaluations

Among the fifteen program descriptions included in the data base citations are the following:

> *"The Sea Beside Us for the Special Child" is a project in marine science for exceptional children in Delaware. Funded through Title I ESEA, the program attempts among other things to provide an outdoor, overnight experience for children who are mentally retarded, learning disabled, orthopedically handicapped, hearing impaired, or visually impaired; and to introduce these children to the environmental aspects of their state's bays, beaches, and marshes. The program teaches socialization and independence in the course of academic activities, and boasts a teaching structure featuring various concept development methods, reinforcement techniques, and multisensory associations. (EJ 109 312)*

"Meeting Children's Needs" is a California curriculum model designed to help individuals understand their world and its effect upon them. Handicapped students are mainstreamed with non-handicapped students for individualized, interdisciplinary, and multicultural educational experiences in the field, and for instruction which provides opportunities to discover, observe, evaluate, and experiment with the environment both in and out of the classroom. The program functioned on an experimental basis from 1972 to 1975. During those years, 201 male and female high school freshmen were ramdomly selected to participate in the program. The sample population included students from many socio-economic and cultural backgrounds. Some were legally blind, emotionally handicapped, or mentally retarded; others were "normal," exceptionally talented, or gifted. A six-to-eight week period of preassessment and instruction in subject areas related to the field study was followed by the field experience, lasting two to three weeks, in which students visited and conducted in-depth analysis of selected localities. Dramatic results the first two years necessitated the establishment of evaluation controls in 1974 and 1975. Students in the experimental group comprehended materials on a higher level than those in

the control group, thus proving the program's success. (ED 126 638)

In 1971, the Macomb Independent School District in Mt. Clemens, Michigan, began an experimental program of outdoor education for its special education students. To meet the special needs of all types of handicapped children, the staff developed a basic curriculum of outdoor education activities and environment awareness, carefully geared to its audience's abilities and realistic in its expectations. The curriculum was implemented in a series of three-day resident laboratory sessions for special education students aged 3 to 24, with a wide variety of handicaps: orthopedic, trainable mentally retarded, educable mentally retarded, hearing impaired, and physically impaired. The naturalistic setting helped provide for the integration of cognitive, affective, and psychomotor aspects of learning. Formal evaluation of the program during 1973 and 1974 revealed that it was successful in training special education teachers in the use of the outdoors as an educational tool for handicapped children. Although the program helped improve the children's achievement in regular school subjects, it was not significantly more successful than a standard program. The value of the unique program lay in its effectiveness in increasing the students' awareness of their own environment and improving their affective growth. In 1976, the program was funded as a demonstration center for exemplary and innovative programs.

The Macomb project generated an enormous amount of materials and information, much of which was compiled in a handbook of outdoor education for special education students. The 43-section handbook contains a comprehensive bilbliography and includes sections on how to develop outdoor lab sessions, instructional programs in several disciplines, and activities designed to meet the specific needs of various handicapping conditions. The handbook is accompanied by four filmstrips and cassette tapes. (ED 121 051; ED 118 339)

What began as a springtime campout for special education students turned into a full outdoor education program for handicapped students in the West Shore School District of Lemoyne, Pennsylvania. Teachers developed a wide array of original, interdisciplinary materials; and, for two months prior to a week-long camping trip, all instruction for the fifty intermediate-level special education students was geared to outdoor education. While there was no formal evaluation of the project and its effect on the students, they clearly enjoyed themselves and wanted to repeat the experience.(EJ 119 391)

Guides for Program Development

The documents listed below include general considerations and specific information regarding the development of outdoor education programs geared to the handicapped. Position papers and proceedings of workshops focusing on the topic are also noted.

ED 134 408 *Nature Trails for the Visually Impaired* by Jonathan R. Schwartz.

ED 118 339 *Discovery: Guidelines for Establishing an Outdoor Education Program in Special Education* by Kristine Ann Bott and Donald Max Bannasch.

ED 105 672 *Outdoor Education for the Handicapped* by Ralph R. Dykstra.

ED 091 140 *Institute on Outdoor Education for the Handicapped (Battle Creek Outdoor Education Center, Clear Lake, Dowling, Michigan. June 1969).*

ED 081 566 Annual Reports to the Council on Outdoor Education and Camping by F. V. Anderson.

ED 081 551 *Outdoor Education "Without Boundaries"* by Kirk Wipper and others.

EJ 187 730 "The Right to Risk" by Carol Ann Peterson, *Journal of Physical Education and Recreation*, vol. 49 n.4, April, 1978 p. 47-48.

Instructional Materials

Ten documents in the ERIC data base either suggest outdoor education learning activities or are themselves actual teaching materials. The variety of the activities described indicates the adaptability of outdoor education as a teaching environment and an educational tool.

"Let's-Play-to-Grow" is a curriculum of play and recreational activities adapted to the needs of the teacher and parents of physically, mentally, and emotionally handicapped children. The materials kit consists of a teacher's guide and twelve play guides which outline the teaching of selected physical activities. Each guide includes teaching techniques and pointers, games and activities, illustrations, appropriate materials, a resource list, and a bibliography. In addition to a guide to hiking, camping, picnics, and water activities; guides to basic ball skills; walking, running, and jumping; six specific sports are included. (ED 165 366)

Games, sports, and nature activities are among the nine activitiy categories detailed in *The Guide to Avocational Activities*, a reference for occupational and physical therapists, social workers, and counselors involved in avocational counseling for people with physical, mental, or emotional handicaps. The guide fully describes each activity and estimates whether or not it is within range of the physical and/or mental capability of a person with a given impairment. Virtually all types of physical, mental, and emo-

tional handicaps are considered. For each activity the guide also notes relevant enviromental and socio-phychological factors, approximate range of energy expenditure, cost of any necessary equipment, and a list of references. The three-volume guide contains a "Quick-find List" in which activities are indexed by relevant environmental factors, socio-phychological factors, and impairment and energy expenditure range. (ED 063 703; ED 063 704; ED 063 705)

ERIC invites authors of pertinent program reports, journal articles, conference papers, theses, speeches, instructional materials, and other documents to submit them for inclusion in the ERIC data base. Such materials may be sent to the attention of Judi Conrad at:

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OUTDOOR EDUCATION

Mini Review

OUTDOOR EDUCATION NATURE CENTERS

What is a nature center?

A nature center is an area of undeveloped land with facilities and services designed to provide outdoor educational and recreational programs. These programs endeavor to stimulate nature education, appreciation and conservation. Although a nature center is not a park or museum or zoo, it is a place for outdoor recreation, it is an exhibitor of living and non-living things, and it is an exhibitor of local native plants and animals (1).

Land for nature centers should be undeveloped and unspoiled from its original condition and is, ideally, a representative sample of the original landscape of the area. It can be forest, prairie, tidelands, hill country, mountains, or desert. Ownership of the land may be private or government, while operating finances may be private, government, or a combination of the two (2).

Facilities on the land vary greatly, with the notable exceptions of a central building — accomodating meetings, exhibits, books and materials — and nature trails — highlighting the native plants, animals, and geologic features of the area. Other facilities range from wildlife sanctuaries and camping areas to weather stations and arboretums.

Services provided by the nature center depend on its facilities; however, most nature centers do provide seasonal programs and tours of the center for groups and individuals (sometimes self-guided by booklets and trail markers). The seasonal programs include such services as workshops for science teachers; camps for school children; instruction on weather, astronomy, compass and map reading; studies of soil, rocks, plants, trees, fish, birds, and animals. Some also have hobby programs in photography, art, crafts, or mountaineering.

How many nature centers are in operation?

As of 1975, five hundred and fifty-eight nature centers were in operation, including forty-one in Canada. Previous to 1975 the number of nature centers had been increasing at about one hundred each year (3).

Why are nature centers valuable?

Nature centers are valuable especially in today's urbanized world because they are places where individuals can enjoy an unspoiled natural environment and can increase their knowledge and understanding of man's place in the scheme of living things. For school-age children in particular, these centers provide a rich envilronment for learning about the science. They are places where children and adults may have first-hand experiences and make personal discoveries about nature.

Research on the benefits of nature centers has shown striking results. An Arizona study, completed after children had participated in nature center activities, showed that the children had better attitudes about learning in the content areas of science, math, reading and language (4). Children tested in a Michigan study achieved better academically in the sciences after nature center instruction (5).

Besides the learning benefits they provide, nature centers are also havens of relaxation and reflection away from the hurried, pressured pace of daily living. The pressures of living are especially great for the mentally and physically handicapped because they must push to develop skills and knowledge which lie beyond their easy reach. For these children, the nature center means an opportunity to learn at a pace of their choosing. They are able to acquire new feelings of competence because of the learning and participation opportunities for them there. And yet, for brighter and more mobile children, the challenges are still available. It is the informality and less-structured atmosphere of the nature center, which allows a freedom to learn in an effortless way (6). Troubled children have repeatedly responded well when given a chance to reflect on nature, put life in perspective, and gain positive self images. Thus the benefits and the value of nature centers are as varied and different as the people who use them.

How do you set up a nature center?

Planning a nature center can be made simple by the expert advice readily available from agencies of the federal, state, and local governments. When seeking the answers to questions in their areas of specialization, consult with organizations like the U.S. Weather Bureau, the Soil Conservation Service, the U.S. Forest

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Service, the U.S. Department of Agriculture, or your county extension agent. Advice on the best location, the natural resources to seek, methods of conserving and enhancing the land, and auxiliary facilities are just some of the areas about which these experts are able to advise. Others who may be consulted for help in planning are local biologists, nurserymen, landscape architects, and agronomists. They can also advise about selecting the land, plants, and animals for the nature center, as well as developing nature trails and other facilities.

Local youth organizations, schools, city and county agencies, and community members can provide input on the needs of the community, which can be fulfilled by the nature center.

Established nature centers can provide information and advice on selection of animal and plant species, facilities, and resource materials. Local science teachers are ideal consultants for recommending resource books and materials as well as planning the curriculum of the center. Other good sources of information about books and materials are local bookstores and the Audubon Society.

Constructing the nature center is no problem if funds are available for building it all at one time. Otherwise, a phasing-in procedure can be used to make the center operational long before construction is finished (4). In such a procedure, the first phase would be to build a road to the site and drill a well or make other provisions for getting water to the site. Then, an outdoor teaching area — perhaps an amphitheater — and nature trails can be built. With the outdoor teaching area, appropriate interior roads, parking areas, and toilet facilities must be added. Also during this time, guide books should be written for use with the trails. A portable materials facility is adequate for the outdoor teaching facility. When funds are available, the next phase should include construction of the building and needed parking areas. Finally, the complimentary facilities — a pond, an arboretum, a weather station, a wildlife sanctuary — can be added.

Organizing the space in the building is key to the success of the center. A large meeting room for groups, a resource center for books and materials, and areas for exhibits and displays are some of the priorities for the building. Audio visual equipment and storage space are another consideration. Display and exhibit areas should be big enough to contain some of the large, general displays, which help put the local area into context. Some of these displays are local plant and animal identification and classification; local geologic and biologic history; an explanation of the ecosystem; and special seasonal representations of nature.

Publicizing the newly completed nature center can be accomplished by local news releases, printed brochures, and dissemination of the information to their members by local interested organizations.

Who uses nature centers?

While nature centers seem to be generally structured for school-age children, other groups also use and enjoy the education and recreation provided. Programs are designed to serve groups such as the YMCA, the YWCA, garden clubs, senior citizen groups, civic organizations, hobby groups (including photography clubs, artists, bird watchers) as well as Girl Scouts, Boy Scouts, Girls' Club, Boys' Club, and schools (7). The physically handicapped are served by many nature centers which provide paved nature trails and barrier-free buildings (4). Retarded persons are often served by special nature instruction programs and recreation. Families and other urban residents are the remainder of nature center users.

What are some of the highlights of existing nature centers?

At the Prescott Public Schools in Arizona, games of all kinds are used to teach students about plants, animals, and the environment. A seed game teaches students the methods of seed dispersal used by local plants; a plant puzzle teaches the relationship between internal and external characteristics of plants. In addition to the games, students catch and mount insects, conduct experiments to measure moisture in plants, study the effects climatic changes have on plants and animals, and study the life cycles of plants and animals and the relationship between them (4).

The Chinle Boarding School in Arizona uses a Job Corp Center in Heber, Arizona as its nature center. Indian students from the school learn tracking and trailing, outdoor cooking, crafts, pond biology, forest environment, and astronomy while camping at the borrowed center (8).

The Laredo Taft Field Campus in Illinois boasts as one of its highlights an Instructional Materials Center. The materials in this center include extensive examples of print media — including comic books with Mickey Mouse and Ranger Rick discussing conservation — slides, films, and tapes. Also, the center houses the hardware needed to use the resources — projectors, cameras, dry press, and tape recorders. Training of future teachers is an important service of the Instructional Materials Center. This training includes instruction in outdoor education and a survey of the literature about it (9).

Mountaineering, canoeing, and mountain leadership are three of the unusual courses taught at the New Zealand Outdoor Pursuits Center. The center, located on the slopes of Mount Ruapehu, is geared especially to teaching outdoor leadership and survival skills at the secondary level (10).

The Dillon Outdoor Education Center teaches a special ecology program to high school students. The emphasis is on scientific research, with courses in writing, oral language, photography, and political interests

incorporated into this research (11).

Jordon Park Nature Center in Wisconsin boasts a pond, a picnic area, animal pens set in natural surroundings, and some unusual features in the nature center building — fish, aquaria, an aquatic plant aquarium, a beehive, a touch table, and an electric quiz board. The interior of the building is especially pleasant because of the care that went into its design. This indoor environment includes lively colors, easily viewed displays, and views of the outdoors from the windows. Continuous slide/tape presentations of outdoor scenes, changing seasons, and macro- and micro-scopic plants and animals are other eye catchers at the center (7).

Prepared by Linda Stout Chavarria

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